N° 23,022 A.D. 1894

Date of Application, 27th Nov., 1894—Accepted, 29th Dec., 1894

COMPLETE SPECIFICATION.

Improvements in Apparatus for Producing a Sleep-giving or Appeasing Sound.

I, Per Erik Fahlberg, of Nyköping, in the Kingdom of Sweden, Electrician, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained, in and by the following statement :— .

The apparatus forming the subject of the present invention is founded in the principle, that a softly whispering sound tends to produce sleep.

For this purpose the apparatus is so arranged as to produce such a sound and consists chiefly of very weak springs, easily bent films, soft brushes and such like, fixed to a rotating wheel and in the rotation of the wheel dragging on the inside of a lattice cylinder, which surrounds the wheel and which may be corrugated or consist of bars or the like, placed in a circle around the wheel at equal distances from each other in order that the sound may be a whispering sound and have a certain character. The wheel is driven by a clockwork or other suitable motor.

In the accompanying drawing

Figure 1 shows a side elevation of the apparatus, partly in section,

Figure 2 a top view of the same.

Figure 3 shows a modification of the fixing arrangement for the springs.

Figures 4 and 5 show a modification of the cylinder and

Figures 6, 7 and 8 show a modification of the wheel as well as of the springs.

From a vertical shaft *a*, driven by a spring and a wheel gearing situated in the foot piece *b* and similar to that of an ordinary clock work, extend horizontal arms *c*, having at their ends cross pieces *d*, to which are pivotally connected other cross pieces *f* by means of small end pivots *e* or in any other hingelike manner, the springs or brushes being secured to the said cross pieces *f*. Figure 1 shows springs *g* and Figure 1^A shows brushes *h*. The springs, which must be very thin and easy to bend, but yet somewhat elastic, are made of thin sheet metal cut to narrow strips or if desired in any other desirable manner. Around the wheel thus obtained is a circle of bars *i* at equal distances from each other and rather close together. In the rotation of the wheel the spring fastenings tend to turn, so that the springs have a radial position and are brought to drag across the bars, thereby bending a little. In consequence of the great number of springs and of the close position of the bars a softly whispering sound is thereby produced. The whispering itself is caused by the springs being extremely thin and weak and forming a fringe, so that if they are permitted to drag on a finger, put inside the bars from above, it is almost impossible to feel them.

For the rest the pressure of the springs on the bars mainly depends upon the centrifugal force, as the springs in consequence of the fastenings *f* being easy to move, may swing outwards freely. It is therefore possible to regulate the sound by increasing or diminishing the speed of the wheel. The great flexibility of the springs assists in making the sound uniform, as they easily bend away from objects, which would cause a sudden resistance. The great movability of the springs also serves to regulate the speed of the wheel, because if the speed increases the increasing pressure of the springs acts as a check, and inversely, if the speed decreases.

Around the bars is applied a protecting net of wire gauze, which prevents such objects, as might damage the apparatus, from entering between the bars. The net

[*Price* 8*d*.]

does not prevent the emanation of the sound. This is indicated in Figure 2 by a circle *k*. The shaft *a* may also be provided with one arm above and one arm below for each spring fastening, which is applied directly between said arms. This is shown in Figure 3, where *l* and *m* designate the two arms, which are bent at their outer ends, the one upwards and the other downwards, forming pivots, on which is applied and about which may turn the spring fastening *f*, which is bent at its ends. Instead of bars a corrugated plate cylinder may be used, which cylinder may be either uniformly perforated or perforated only between the internal ridges so as not to enclose the sound too much. Figures 4 and 5 show such a cylinder *o*, which is supposed to be made of a net, similar to the net *k* mentioned above.

The modification shown in Figures 6 and 7, consists in that the small springs *g* are directed obliquely inwards, and secured to fixed supports *p*, while rods *q* are applied to the wheel *s*, s^1 by means of pivotally fixed arms *r* in such a manner, that they may swing outwards. The mode of action is thus the same as above described, as the rods are swung outwards against the springs by the centrifugal force and drag on the springs with a pressure depending on the rotary speed of the wheel. The rods may also be fixed directly between the arms *s* and the springs may be placed nearer to the shaft s^1, so that the rods drag on the springs, as shown in Figure 8. The sound then becomes more hard but may yet be used. The apparatus is placed more or less near the head of the bed as most agreeable having regard to the intensity of the sound. The device is provided below with a key *t* for winding up of the driving arrangement.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is :—

1. An apparatus for producing a sleep giving and appeasing sound consisting of soft springs, films, brushes or the like (*f*) which are fixed to a rotating part and drag on an obstacle arranged in the path thereof, as for instance bars, a corrugated surface or the like.

2. An apparatus for producing a sleep giving or appeasing sound, consisting of soft films, springs, brushes or the like, secured to a rotating part and dragging on bars, placed in a circle around the rotating part or on a corrugated or ridged cylinder, which surrounds the rotating part and which may be whole or perforated.

3. An apparatus for producing a sleep giving or appeasing sound, consisting partly of a rotating shaft (*a*), driven by a suitable motor and provided with projecting arms (*c*), to which are pivotally connected cross pieces (*f*), carrying soft springs (*g*), films, brushes or the like, and partly of a circle of bars (*i*), a ridged or corrugated cylinder (*k*) or the like, which surrounds the rotating part and on which drag the springs, films, brushes or the like, swinging freely outwards.

4. An apparatus for producing a sleep giving and appeasing sound, consisting of rods (*q*), attached to a rotating part (*s* s^1), by means of arms (*r*) so that they may freely swing outwards, and of soft films, springs, brushes or the like, which are placed in a circle around the rotating part obliquely inwards towards the same and on which the rods drag during the rotation (Figure 6).

5. An apparatus for producing a sleep giving and appeasing sound, consisting of rods (*q*) secured to a rotating part and of weak springs, soft films, or brushes, which are placed around the rotating part obliquely to the axis of the same and on which the rods drag during the rotation (Figure 6).

6. In such apparatus for producing a sleep giving and appeasing sound, as consist of soft films, springs, brushes or the like, secured to a rotating part, for instance a wheel, and dragging on an obstacle, for instance a ridged cylinder, surrounding the wheel, the arrangement in which the films, springs or brushes have a fastening, pivotally connected to the rotating part, so that in consequence of the centrifugal force they may swing freely outwards during the rotation, with the

object of producing an uniform sound, which may be regulated by increasing or decreasing the speed of the wheel.

7. In the apparatus, indicated in the first claim, the arrangement in which the obstacle on which the springs, films or brushes drag consists of a corrugated plate perforated all over or only between the internal ridges, or of a corrugated fine net or of bars, placed in a circle around the rotating part.

Dated this 27th day of November 1894.

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Fig: 1

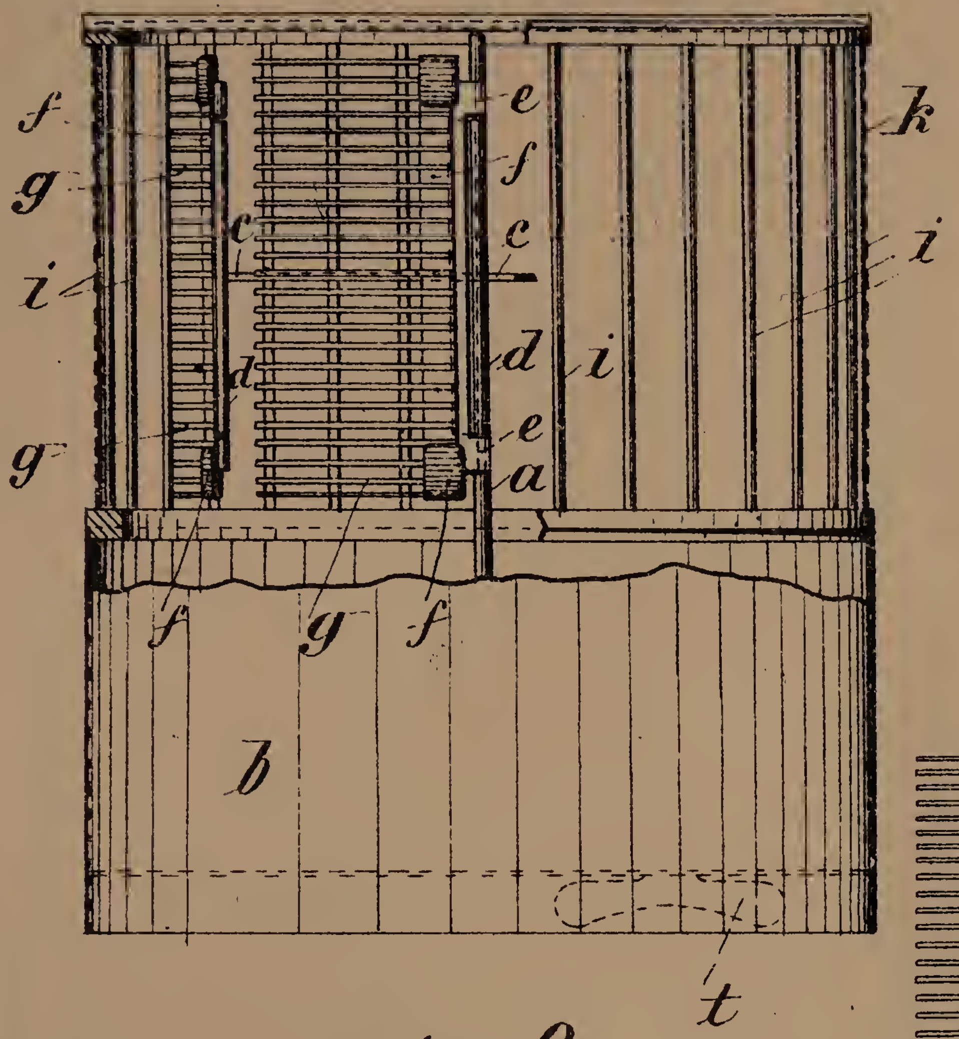


Fig: 1a

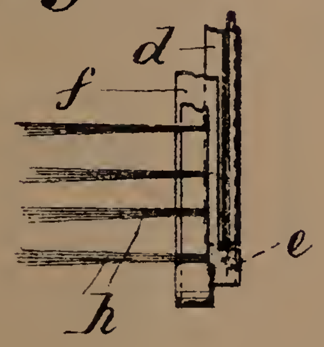


Fig: 2

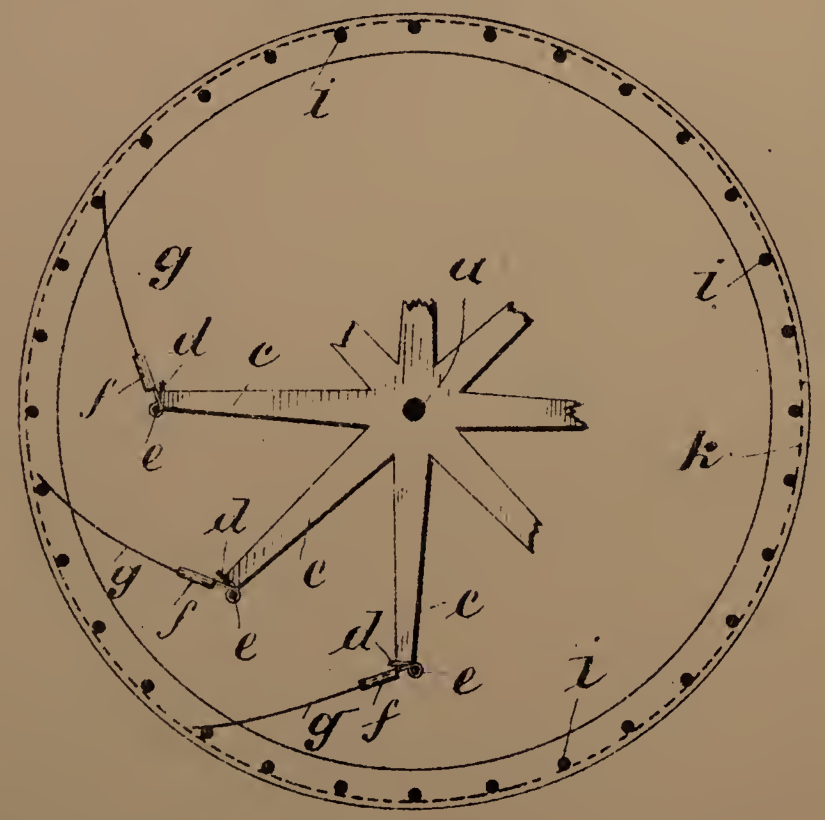


Fig: 3

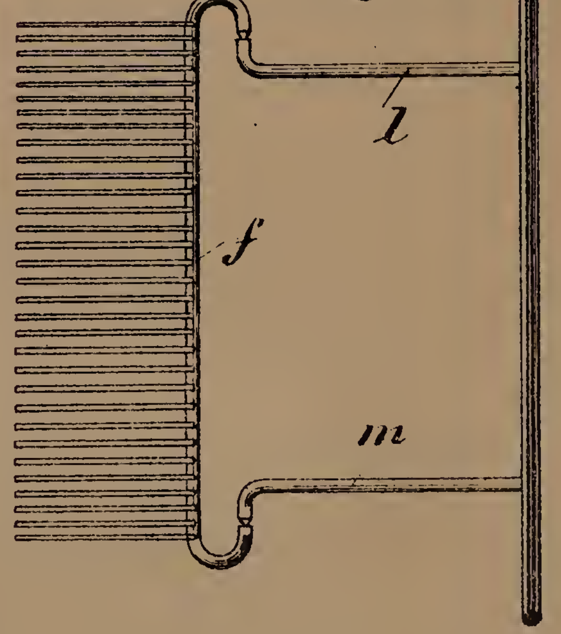


Fig: 4

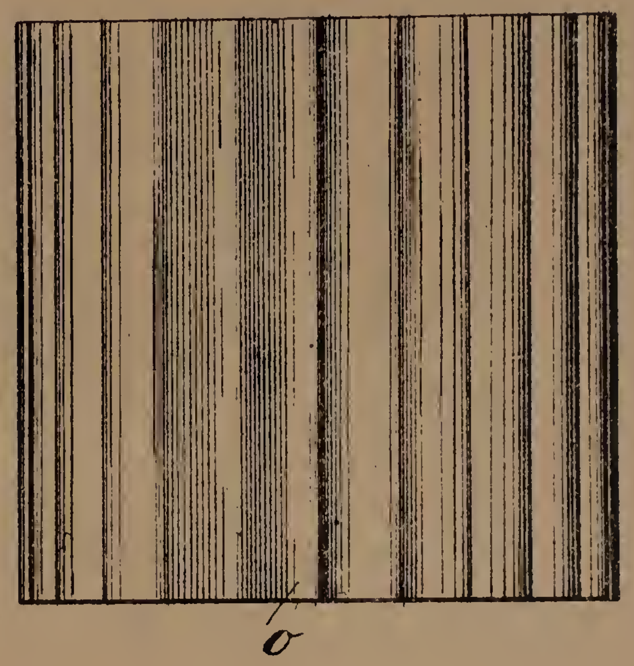


Fig: 6

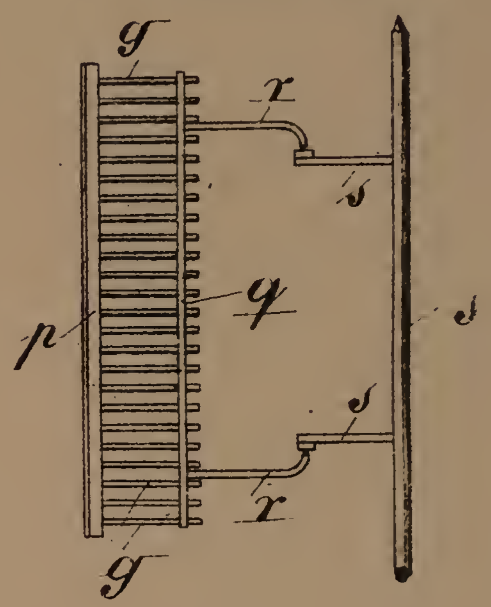


Fig: 7

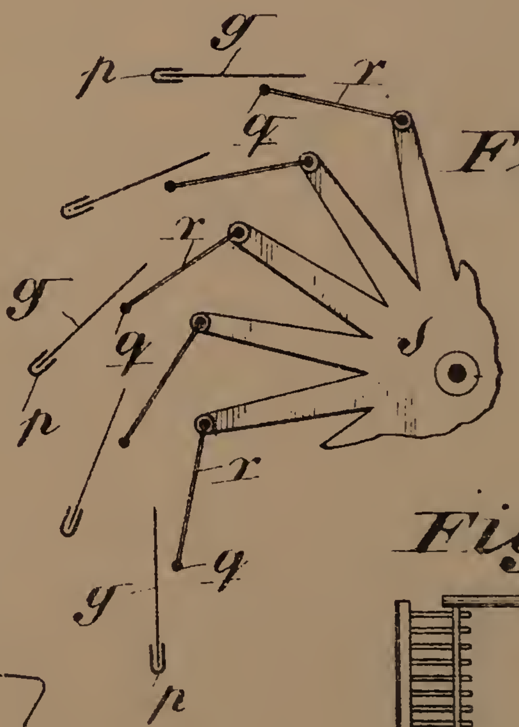


Fig: 5

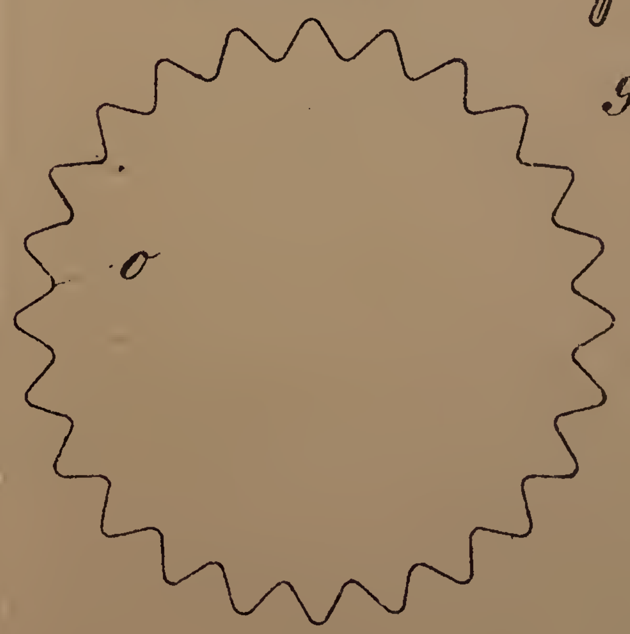
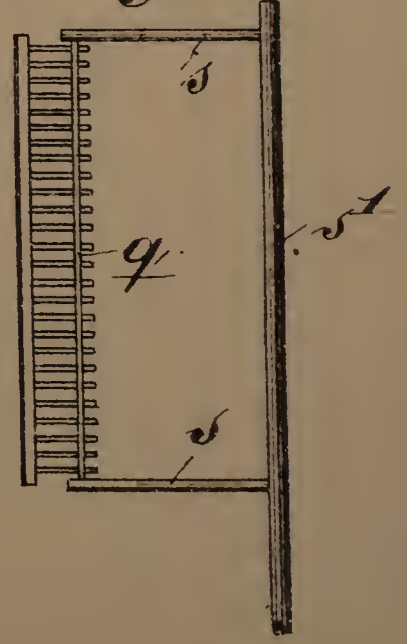


Fig: 8



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